

ART 34 AMDT

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CLAIMS 10.5.2000

1. A method of transmitting synchronized channels in at least two radio transmitters, where normal radio bursts are transmitted (606) on a normal channel asynchronously, **characterized** by
- 5 (702) obtaining synchronized timing;  
(708) forming synchronized radio bursts (SB), the length of which is at most half of the length of a normal radio burst;  
(710) transmitting synchronized radio bursts in the place of normal radio bursts such that the transmission of the synchronized radio
- 10 bursts is synchronized with the obtained synchronized timing.
2. A method according to claim 1, **characterized** by forming at least two successive synchronous radio bursts (SB), at least one of which is transmitted.
3. A method according to claim 1, **characterized** by
- 15 placing at least one synchronized radio burst (SB) in a burst having the length of a normal radio burst.
4. A method according to claim 3, **characterized** in that the part of the burst that does not belong to the synchronized radio burst (SB) consists of predetermined padding bits (PAD).
- 20 5. A method according to claim 1, **characterized** in that the synchronized radio burst (SB) comprises a predetermined bit pattern (TS).
6. A method according to claim 5, **characterized** in that the bit pattern is a training sequence.
7. A method according to claim 1, **characterized** in that
- 25 the synchronized radio burst (SB) comprises information (INFO), such as the location coordinates (COORD) of the radio transmitted and/or the offset (OFFSET), i.e. the time difference between the transmission moments of the ideal synchronized radio burst and the actual synchronous radio burst.
8. A method according to claim 1, **characterized** by
- 30 placing the radio burst in a time slot.
9. A method according to claim 1, **characterized** in that the synchronized channel is transmitted by means of at least one normal physical channel.
10. A method according to claim 9, **characterized** by
- 35 indicating on a control channel the physical channels to be used for the transmission of the synchronized channel.

AMENDED SHEET

11. A method according to claim 1, **characterized** in that the physical channels in the direction of reception corresponding to the synchronous channel in the direction of transmission are used to transmit signalling information, such as measurement results.

5 12. A method according to claim 1, **characterized** in that the method is used in a locating method, such as the OTD (observed time difference) method.

10 13. A method according to claim 1, **characterized** in that a synchronized radio burst is transmitted when the radio transmitter is in discontinuous transmission.

14. A method according to claim 1, **characterized** in that the transmission of synchronized radio bursts only employs a part of the capacity of a normal channel.

15. A radio transmitter comprising:  
a channel codec (216) for forming a normal channel;  
a burst former (228) for forming normal radio bursts;  
a multiplexer (226) for assigning to each burst the moment for its transmission;

20 **characterized** in that it also comprises a clock (180) for obtaining synchronized timing, which synchronized timing defines the coordination between the transmission of radio bursts from at least two different base stations (100) comprising each at least one radio transmitter;

25 the channel codec (216) is arranged to form a synchronized channel;

the burst former (228) is arranged to form synchronized radio bursts (SB), the length of which is at most half of the length of a normal radio burst;

30 the multiplexer (226) is arranged to insert a synchronized radio burst in the place of a normal radio burst such that the transmission of the synchronized radio burst is synchronized with the obtained synchronized timing.

35 16. A radio transmitter according to claim 15, **characterized** in that the burst former (228) is arranged to form at least two successive synchronous radio bursts (SB) and the multiplexer (226) is arranged to insert at least one of them in the place of a normal radio burst.

17. A radio transmitter according to claim 15, **character-  
ized** in that the burst former (228) is arranged to form a burst the length of  
which equals the length of a normal radio burst and which comprises at least  
one synchronized radio burst (SB).

5 18. A radio transmitter according to claim 17, **character-  
ized** in that the burst former (228) is arranged to place predetermined  
padding bits (PAD) in the part of the burst that does not belong to the  
synchronized radio burst (SB).

10 19. A radio transmitter according to claim 15, **character-  
ized** in that the burst former (228) is arranged to place a predetermined bit  
pattern (TS) in the synchronized radio burst (SB).

20. A radio transmitter according to claim 19, **character-  
ized** in that the bit pattern is a training sequence.

15 21. A radio transmitter according to claim 15, **character-  
ized** in that the channel codec (216) is arranged to place in the  
synchronized radio burst (SB) information, such as the location coordinates  
(COORD) of the radio transmitter and/or the offset (OFFSET), i.e. the time  
difference between the transmission moments of the ideal synchronized radio  
burst and the actual synchronous radio burst.

20 22. A radio transmitter according to claim 15, **character-  
ized** in that the multiplexer (226) is arranged to place the radio burst in a  
time slot.

25 23. A radio transmitter according to claim 15, **character-  
ized** in that the channel codec (216) is arranged to use at least one normal  
physical channel for the synchronized channel.

24. A radio transmitter according to claim 23, **character-  
ized** in that the radio transmitter is arranged to indicate on a control channel  
the physical channels to be used for the transmission of the synchronized  
channel.

30 25. A radio transmitter according to claim 15, **character-  
ized** in that the radio transmitter is arranged to receive signalling data, such  
as measurement results, from the channels in the direction of reception  
corresponding to the synchronous channels in the direction of transmission.

35 26. A radio transmitter according to claim 15, **character-  
ized** in that the clock (180) is a GPS receiver.

27. A radio transmitter according to claim 15, **characterized** in that the radio transmitter is arranged to transmit a synchronized radio burst when the transmitter is in discontinuous transmission.

28. A radio transmitter according to claim 15, **character-**  
5 **ized** in that the radio transmitter is arranged to use only a part of the  
capacity of a normal channel for the transmission of synchronized radio  
bursts.

ursts.

Add All

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